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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,281	01/20/2004	Minoru Ando	Q79125	6860
23373	7590	05/05/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			MACCHIAROLO, PETER J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/759,281

Applicant(s)

ANDO ET AL.

Examiner

Peter J. Macchiarolo

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application on 04/17/2006. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/20/2006 has been entered. However, pending claims 1-3 and 5-9 are not allowable as explained below. An action on the RCE follows.

### ***Specification***

The abstract of the disclosure is objected to because it does not comply with the specified language requirements. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

*Claim Objections*

Claims 5 and 6 are objected to because of the following informalities: Claims 5 and 6 recite “the blank” while the claim they depend from, claim 1, recites “the pipe.” The Examiner reads these two different terms as referring to the same element, and hence, claims 5 and 6 do not have proper antecedent basis. Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Kiyoshi et al (JP 08285280; “Kiyoshi”).**

Regarding claim 1, Kiyoshi discloses in paragraph [0010] and figures 1a-2j a method of making a metallic shell for a spark plug, the metallic shell including a multi-stepped through hole (6, 7, 8), an intermediate tubular portion (2), a tip end side tubular portion (3) disposed on a tip end side of the intermediate tubular portion and a base end side tubular portion (1) disposed on a base end side of the intermediate, tubular portion, the through hole including, in the order from a base end side to a tip end side of the spark plug, a large diameter hole section (6), an intermediate diameter hole section (7) smaller in diameter than the large diameter hole section and a small diameter hole section (8) smaller in diameter than the intermediate diameter hole section, the method comprising the steps of; cutting a metal pipe that is used as a starting

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material to a predetermined length and thereby preparing a pipe-shaped blank [0010]; and subjecting the blank to a deformation process (press shaping, i.e. extrusion [0010]) and thereby forming the blank into the metallic shell. Furthermore, Kiyoshi shows in figures 1a-2j and describes in paragraphs [0026]-[0028], an outer diameter of the pipe (40) is larger than that of the tip end side tubular portion of the metallic shell (3) and smaller than that of the intermediate tubular portion (2).

Regarding claim 2, Kiyoshi discloses in figures 1a-2j and describes in paragraphs [0026]-[0028] an inner diameter of the pipe (40) is larger than a diameter of the small diameter hole section (3) and smaller than a diameter of the large diameter hole section (1).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi in view of previously cited Blackmore (USPN 1701401; "Blackmore").**

Regarding claim 3, Kiyoshi is silent to the inner diameter of the pipe being equal to a diameter of the small diameter hole section.

However, Blackmore teaches in column 1 lines 4-6 and lines 35-39, that a method of manufacturing a spark plug that includes the inner diameter of a pipe being equal to a diameter

of a small diameter hole section reduces the number of manufacturing steps, which enables a convenient and economic method of manufacture.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the spark plug with the method of Kiyoshi having the inner diameter of the pipe being equal to a diameter of the small diameter hole section to allow for a convenient and economic method of manufacture.

**Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi in view of previously cited Fischer et al (CA 645083; "Fischer").**

Regarding claims 5 and 6, Kiyoshi is expressly silent to forming by extrusion the second, third, fourth, and fifth steps as recited by Applicant.

However, Fischer does teach that using a punch and a specific die to extrude a blank into a specific shape allows for a modular manufacturing process, enabling specific shape formation procedures to be carried out at specific steps in the manufacturing process, allowing for a flexible formation process which can accommodate a variety of different blanks formed into various desired shapes that can meet several different spark plug requirements, thereby fitting into a variety of engines.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the spark plug of Kiyoshi with the specific extrusion steps to allow for a modular manufacturing process which can accommodate a variety of internal combustion engine configurations and requirements.

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**Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi.**

Regarding claims 7-9, Kiyoshi is silent to the exact dimensions of the final spark plug.

However, one of ordinary skill in the art understands that the final spark plug must have certain dimensions so as to properly fit into an internal combustion engine, and that a standard spark plug has length L that exceeds 19mm, and diameter D is less than 10.5mm, and axial length T exceeds 2mm.

Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the proper size of a component involves only routine skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Kiyoshi's spark plug with the recited dimensions for proper operation in specific internal combustion engines.

### ***Response to Arguments***

Applicant's arguments filed 03/20/2006 have been fully considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

For Applicant's convenience, a computer-translated copy of Kiyoshi is supplied herewith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375.

The examiner can normally be reached on 8:30 - 5:00, M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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